7:Tobe C, T-3 (1959)1960 AV7 Burusho AV7
Hunza

tilizers are used on their lands. 241

(8) All children in Hunza are breast fed. There is no specific prenatal care, and the good health of the mother is passed on to the infant . . . and the breast feeding gets the child off to a good start. 853 843

(9) All fruits and vegetables that are dried for storing have been exposed to the sun and air. No foreign substances are added or treatments used. 251

(10) Native herbs are used extensively . . . both as seasoning and as food. 262

(11) Glacial waters are the only waters used both for drinking and irrigation purposes. These glacial waters definitely contain many valuable minerals and nutrients, as revealed by laboratory tests. 312 146

(12) Apricot kernel oil is the most important source of fat. It is used in cooking as well as for salads. No solvents or extreme heat is used to extract the apricot oil. 262

(13) Natural whole grains are used broadly. There is no fragmentization in Hunza. While they do bake a bread, their chief form of bread is an unleavened type which they call chapatties. They are composed of whole ground grain made into a dough and rolled very thin. Then they are heated or baked slightly.

(14) Hunzans are light eaters. Their diet is comparatively meager.

There is no doubt that, if any human being were to follow the health rules of the people of Hunza, he could regain or maintain health. There is no magic formula connected with this set of rules. They are simple and to the point. In fact, they are so simple that most people will doubt their value. To these people I would say, "All of the great things in life—the important things and things of value—are invariably simple!" 000

In Hunza the following established Western health 744

[P. 41- A]

114 Western equipment. (Training in anat-
123 omy, some concentrated informal studies of Asian diseases, plus previous experience, made this possible for me. In addition, I ran three experimental gardens and founded a craft school. with the Mir's approval.)

164 Bohar had developed scurvy, after
●144 which staphylococcus infected the
123 gums and abscessed the roots of his teeth; the abscesses had then eroded downward through the jawbone and out through the flesh and skin. After washing out the sores, I gave him vitamin C tablets to stop the scurvy, and vitamin D with calcium lactate to cure the rickets that were stiffening his knees. The old man was by no means
[252] atypical. My dispensary was always beset by lines of waiting patients, all with afflictions that belied popular beliefs about "the Healthy Hunzas."

8:Clark N-5 (1948-1951) 1963
AV7 Burusho AV7
[P43-C] Hunza

seventeen." Two years before he had told me he was thirteen.

Because the Hunzas, themselves, have no written records, I attempted to estimate longevity on the basis of physical signs of age.

THE elderly Hunzas, I discovered firsthand, show impressive dental evidence of being no older than sixty to seventy-five, not an unusual old-age in Western countries. Owing to a lack of vitamin D and milk in their diet, the great majority of Hunzas have soft teeth. A young man of about twenty-one, just cutting his wisdom teeth, typically has six-year molars that are worn flat. This allows a rate-of-wear calculation that is relatively dependable in determining age. For instance, a man over one hundred years old, at this rate, would have all his molars worn down to the jawbone, but this does not occur even in the teeth of the very oldest Hunzas.

"Purity" has been attributed to the Hunza diet, but the diet itself has seldom been more than superficially observed or related to its highly seasonal pattern. In the summertime the Hunza cuisine is limited, but not too bad. Chapatties—shaped like pancakes and made of coarse, whole-barley flour and water—form the staple, and salted tea is the beverage. Mulberries, fresh apricots, cucumbers, and occasionally sheep-milk butter, round out the

584 Marriages are not arranged against
586 the will of either party, and although
divorce is legally very easy for men
593 or women, it is not common. Women
are neither abused nor overworked,
and the mother is the respected chief
of the house, as the father is of the
[581] farm. Marriage does not encompass
[562] companionship as we know it: men
spend their spare time in the company
of other men, and women visit exclu-
562 sively with other women. They hold
535 their dances on separate threshing
floors a half-mile or so apart, on the
same night, and woe betide the eager
teen-age boy who dresses in his sister's
clothes and sneaks into a girls' dance.

262 At the time of the Tumushuling,
[296] and only then, Hunza families
231 butcher a sheep or two; cold weather
[25] preserves the meat for the few days
before it is all eaten—and it *is* virtually
all eaten. Even the long bones are
cracked to extract the last marrow.
After this taste of meat, the winter of
the dietary year sets in. Gradually the
supply of carrots and potatoes fails,
then the wheat, the barley, the dried
[[148] apricots, and the tea. By springtime
the poorer folk may eat only once in
two days. No one starves to death, but
no one has enough to stop hunger.

146 The regular Hunza diet has no fats,
no animal protein, no vitamin A, no
vitamin D, a deficiency of vitamin B,
and a serious deficiency of calcium.
Apricots contain some sugar and vita-
min C, but the poorer families are un-
245 able to raise large crops. (The size
556 of apricot orchards determines a
man's wealth and status.) Hunzas use
372 every bit of the apricot, as they do of
824 the sheep. They eat the pits from the
fruits, crack them, and remove the al-
[412] mond-like nuts. The women hand-
grind these with stone mortars, then
squeeze the meal between a hand-stone
[359] and a flat rock to express the oil. Apri-
cot oil is fuel for the saucer-shaped
lamps that illuminate their homes, as
lamps of this type have done since the
824 Bronze Age. The oil is very bitter, na-
278 turally enough, because of its high
content of prussic acid, fifty drops of
which are said to be lethal in about
[273] four hours. Men add a few drops, as
[262] bitters, to their wine, and occasion-
ally a despondent woman takes a dose
in order to commit suicide.

164 Mild cases of rickets and scurvy
146 are rampant every spring—not enough
to kill, just enough to loosen teeth,
cause aching knees, and deform ribs

184 into the "fine, barrel chests" reported
146 by travelers. (I found that when they took off their shirts the fine, barrel chests revealed strong asymmetry, with ribs notably warped by rickets.) During my first winter, I developed a typical case of beriberi, even though my diet was more varied than theirs and was adequate in quantity.

133 The basic trouble rests not with the
161 Hunzas, who are neat, intelligent, and
[10] hard-working, but with their country. There is no flat land in all of Hunza.
[36] Villages and farms are built on alluvial
[31] cones—fan-shaped masses of gravel dumped by streams rushing from mountain glaciers down into the valleys—and the small cultivated areas simply are not extensive enough to support the constantly increasing population. (The Mir estimated the population of his country at 25,000 in 1951. According to one of the last of the British agents stationed in nearby Gilgit, Hunza's population was increasing at the rate of 30 per cent each
[67] decade. Rising emigration and the absence of written records obscure the reality, as one might imagine.)

311 Hunza's slopes are so steep they
241 must be terraced by the laborious construction of hand-built retaining walls of boulders. I measured one cultivated slope of 60 degrees—so steep that the retaining walls were twice as high as the miniature plots they supported. And sometimes Hunza farmers will even create arable soil on top of bare rock. After a crescent-shaped wall at the foot of any fairly gentle rock slope is built high enough so the top of the wall is level with the top of the slope, the wall is carefully chinked and mud-caked, then sandy water from the nearest irrigation ditch is admitted to make a small pond. When the sand settles out, the clear water is drained, and more sandy water is admitted. This process is repeated for about two years, until enough sand accumulates to allow cultivation.

134 Much of the "soil" of Hunza fields
311 is thus not really soil. Rather, it is a jumble of unweathered boulders, gravel, and sand. Since Hunza is a
[35] cool but exceedingly dry desert, prac-
[37] tically no plant food is formed. The worst rain that falls soaks rapidly through the spongy sand, leaches out any trace of plant food that may be present, and carries it down to the river. Not even sagebrush will grow on the unirrigated areas, so most slopes are barren. Newly irrigated areas are